



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,316	09/26/2003	Hari Hara Kumar Venkatachalam	K28.12-0001	8394

27367 7590 09/20/2006

WESTMAN CHAMPLIN & KELLY, P.A.
SUITE 1400
900 SECOND AVENUE SOUTH
MINNEAPOLIS, MN 55402-3319

EXAMINER

DINH, DUC Q

ART UNIT PAPER NUMBER

2629

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/672,316

Applicant(s)

KUMAR VENKATACHALAM, HARI
HARA

Examiner

DUC Q. DINH

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is Response to the Amendment filed on July 5th, 2006. Claims 1-20 are pending in the Application, claims 1 and 11 and 18 are currently amended.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 4-5, 8, 13,18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasukawa et al. (U.S Patent No 6,320,559), hereinafter Yasukawa in view of Schoolman (U.S Patent No. 5,281,957).
4. Claims 1-2, 4-5, 8, 13,18 and 19 are rejected under 35 U.S.C. 102(a) as being anticipated by Yasukawa et al. (U.S Patent No 6,320,559), hereinafter Yasukawa.

In reference to claims 1, Yasukawa discloses in Figs 1-2 a pair of data-specs (display 2 has a spectacles like frame 101), comprising:

a pair of spectacles (display 2 has a spectacles like frame 101) adapted to be worn on the face of a person (operator 1); and

a projection unit (display panel 102 and enlarging lens 120 of display 2) coupled to the spectacles (display 2 has a spectacles like frame 101), the projection unit adapted to display data received from an information source (3) [the computer 3 is disposed under the desk 7 to transmit information source to the display device 2; col. 10, lines 63- col. 11, lines 1-3].

Yasukawa does not disclose the pair of spectacles having a first and a second lens which are independent of the projection unit.

Schoolman discloses a projection unit (Fig. 7-9) for a portable computer having first and second lenses 65 and 66 which are independent from the projection unit as claimed.

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the lenses 65 and 66 in the system of Yasukawa as taught by Schoolman to provide users plain lenses or vision corrected lenses as desired (col. 6, lines 45-50).

In reference to claim 2, Yasukawa discloses the information source is a computer, and the projection unit is adapted to display data from the computer (the computer 3 is disposed under the desk 7 to transmit image display information to the display device 2; col. 10, lines 63- col. 11, lines 1-3).

In reference to claim 4, Yasukawa discloses the display (2, Fig. 2 and Fig 5) further comprising a motion sensor 107 (sensor 107 detect the movement of the user head; col. 12, lines 23-26) and a controller (105; Fig. 5), the controller is adapted to receive an input from the motion sensor (107) and responsive to enable a receiver of the projection unit (display panel 102 receive information source from computer and the CPU 132 checks whether or not the output of the sensor 107 has changed, and if it changes when the operator moves his or her head, computes an address required to display a screen within the display frame 51 according to the change in angle to output it to the image memory 104. The display panel 102 displays the image data. In this manner, the operator can view a large number of virtual subscreens 5 by moving his head, i.e. the controller 105 receives input from motion sensor 107 that detects the movement of

operator's head to enable the display 102 to display plurality of virtual subscreens 5 as shown in Fig. 3; col. 12, lines 10-32).

In reference to claim 5 Yasukawa discloses the projection unit is capable of wired communication with the information source (image display information sent from the computer 3 via the connection cord 106 is decoded by the drive circuit 105 and displayed on the liquid crystal panel 102; col. 11, lines 16-18).

In reference to claim 8, Yasukawa discloses the projection unit is adapted to display data, received from the information source on a virtual screen (virtual screen 5 in Fig. 1; when looking somewhat upward, the operator 1 can view a display screen on the liquid crystal panel 102 as a virtual subscreen 5 on a virtual display screen 6 at a distance about 0.5 m to 1.0 m apart from the operator; col. 11, lines 49-51).

In reference to claim 13, Yasukawa discloses the projection unit is configured to receive power from the information source via connection cord 106 (a single cord can be used to supply power to the image display device as well as to transmit image display information to the same device; col. 8, lines 26-29).

In reference to claim 18, Yasukawa discloses a method of forming a wearable device (2) in Fig. 1 that displays data from an information source (computer 3), the method comprising:

providing a pair of spectacles (display device 2 has a spectacles like frame 101) adapted to be worn on the face of a person (operator 1); and

coupling a projection (display panel 102 and enlarging lens 120 of display 2) unit to the pair of spectacles, the projection unit adapted to display data received from an information source (computer 3 providing display data to the display 2; col. 10, lines 67-col.11, line 2).

Yasukawa does not disclose the pair of spectacles having a first and a second lens which are independent of the projection unit.

Schoolman discloses a projection unit (Fig. 7-9) for a portable computer having first and second lenses 65 and 66 which are independent from the projection unit as claimed.

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the lenses 65 and 66 in the system of Yasukawa as taught by Schoolman to provide users plain lenses or vision corrected lenses as desired (col. 6, lines 45-50).

In reference to claim 19, Yasukawa discloses the projection unit is capable of wired communication with the information source (the computer 3 is disposed under the desk 7 to transmit image display information to the display device 2 via a connection cord 106; col. 10, lines 63- col. 11, lines 1-3).

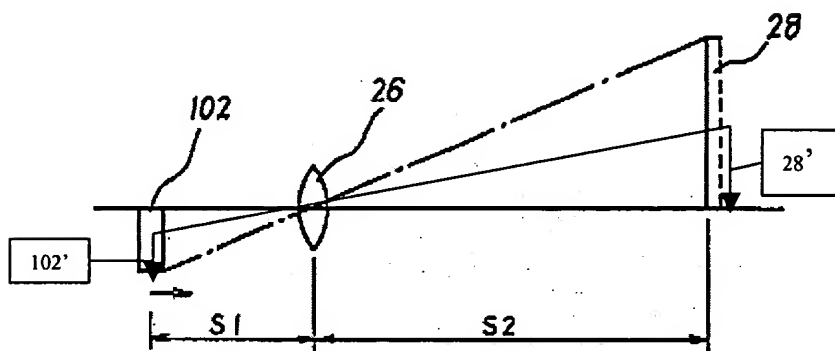
In reference to claims 6 and 20, Yasukawa, in an alternate embodiment discloses the projection unit is capable of wireless communication with the information source (Fig. 46 shows the image information source 81 wireless connected with head up display 2 via antenna 201 and 202; col. 25, lines 17-23).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the wireless communication for the projection unit (2) for allowing the image source (3) to be handheld easily in its use and significantly simplifying the removal and mounting of the display device in the image source (col. 8, line 67 through col. 9 line 3).

In reference to claim 9, Yasukawa discloses a size of the virtual screen is a function of a focal length of line of the projection unit (Fig. 26-27; col. 19, lines 30-40).

Art Unit: 2629

In reference to claim 10, as shown in modified of Fig. 26, given the distance S1 and S2 held constant, the size of the virtual screen 28' is proportional (i.e. is a function) to the size of the display 102' as provided below.

FIG. 26

It would have been obvious for one of ordinary skill in the art to recognize (in the modified Fig. 26) that the size of virtual screen (28') is a function of a size of an image-forming panel (102') of the projection unit and the larger size of the display 102 provides larger virtual screen virtual screen 28.

In reference to claim 12, Yasukawa discloses in an alternate embodiment, the projection unit (2) is battery powered (col. 25, lines 21-23).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the battery for the projection unit so that the projection unit has its own power source for operating when the projection unit used in wireless communication with the information source.

Art Unit: 2629

In reference to claim 15, Yasukawa discloses wherein the projection unit (2) is adapted to receive data from a transmitter (transmission circuit 99) that is integral with the information source 99 (Fig. 46-47 show the transmission circuit 99 in integral with the information source 81).

In reference to claim 16, Yasukawa does not disclose the projection unit is adapted to receive data from a transmitter that is separate from the information source.

However, absent a showing of critically and/or unexpected result, it would been obvious to one of ordinary skill in the art to separate the transmitter from the information source as desired as was judicially recognized with *Nerwin v. Erlichman*, 168 USPQ 177, 179 (PTO Bd. of Int. 1969), which recognizes that make separable of well known element is normally not desired toward patentable subject matter.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasukawa in view Schoolman (U.S Patent No. 5,281,957) and further in view of Preston (U.S Patent No 6,094,283).

In reference to claim 7, the combination of Yasukawa and Schoolman does not disclose the aspect ratio of the data displayed by the projection unit is 4:3. Preston discloses a head mounted display unit having a projection unit (26,28) capable of displaying data with an aspect ration of 4:3.

It would have been obvious for one of ordinary skill in the art at the time of the invention to recognize the typical computer monitor has an aspect ratio 4:3 as well known and widely used

Art Unit: 2629

to display image for computer applications on projection unit in head up display technology as disclosed by Preston (col. 1, lines 30-38)

6. Claims 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasukawa and Schoolman (U.S Patent No. 5,281,957) and further in view of Hori et al. (5,072,209), hereinafter Hori.

In reference to claim 14, the combination of Yasukawa and Schoolman does not disclose the projection unit is a solar powered. Hori discloses a projection unit of a head up display powered by a solar cell. (Fig. 4, lines 2-5).

It would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the solar powered system in the projection unit of Yasukawa as taught by Hori in order to achieve the benefit of saving time and labor to charge the battery separately (col. 4, lines 20-25).

7. Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasukawa in view of Schoolman (U.S Patent No. 5,281,957) and further in view of Kato et al. (U.S Patent No. 5,497,170), hereinafter Kato

In reference to claim 17, the Yasukawa and Schoolman does not disclose a heat deflector for the spectacles unit. Kato discloses a heat deflector 20 for a head-up display having a projection unit 19 with a heat-dissipating member 20 to dissipate heat for the display (Fig. 17; col. 9, lines 65-67 and col. 10, lines 1-4).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the dissipating member 20 to dissipate the heat of the display combination of

Art Unit: 2629

Yasukawa and Schoolman as taught by Kato in order to achieve the benefit of preventing thermal deformation or break other members of the projection unit which could occur if they were subjected to the infrared rays (col. 10, lines 5-10 of Kato).

8. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasukawa in view of Schoolman (U.S Patent No. 5,281,957) and further in view of Mann (U.S Patent No. 6,307,526).

In reference to claim 3, the combination of Yasukawa and Schoolman does not disclose the information source is a television set, and wherein the projection unit is adapted to display data from the television set.

Mann discloses a pair of spectacles (eye-glasses 100) having a projection unit (105) adapted to display data from a television set 160 (television 160 in Fig. 1 contains television tuner; col. 12, lines 55-60).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the television set as the display of the combination of Yasukawa and Schoolman as taught by Mann because it would provide users a combined display system not only capable of displaying data from computer for working but also providing video program from the television for entertaining.

In reference to claim 11, Yasukawa does not disclose the projection unit is configured to possess a resolution of at least 640 X 480 pixels.

Mann discloses the display screen of the projection unit possesses a resolution 640 x 480 pixels (col. 14, lines 28-32).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the display screen having 640 x 480 pixels in the combination of Yasukawa and Schoolman as taught by Mann in order to achieve the benefit of providing clear and sharp images on the virtual screen using small display device.

Response to Arguments

9. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DUC Q. DINH whose telephone number is (571) 272-7686. The examiner can normally be reached on Mon-Fri from 8:00.AM-4:00.PM.

Art Unit: 2629

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DUC Q DINH
Examiner
Art Unit 2629

DQD
September 13, 2006



RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600